**Writeup:**

● Create a MySQL table named feedback for storing feedback data  
● An entity class Feedback should be made with annotations to link it with the feedback table  
● A repository class should then map the entity class to the Crud Repository interface  
● Create a REST controller class to create the REST endpoint. It should take in parameters using the POST protocol  
● Data received in the REST controller will be then saved into the database  
● Create a test form in HTML to submit data to the REST endpoint to ensure it’s working  
● The step-by-step process involved in completing this task should be documented

**Source Code:**

**Open pom.xml**

<?xml version="1.0" encoding="UTF-8"?>

<project xmlns="http://maven.apache.org/POM/4.0.0"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 https://maven.apache.org/xsd/maven-4.0.0.xsd">

<modelVersion>4.0.0</modelVersion>

<parent>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-parent</artifactId>

<version>2.4.3</version>

<relativePath /> <!-- lookup parent from repository -->

</parent>

<groupId>com.project</groupId>

<artifactId>Feedback</artifactId>

<version>0.0.1-SNAPSHOT</version>

<name>Feedback</name>

<description>Create a Spring Boot project that will capture user feedback using a REST endpoint. The REST resource will take in parameters using HTTP POST. The feedback data will be then added to a database table.</description>

<properties>

<java.version>1.8</java.version>

</properties>

<dependencies>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-data-jpa</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-data-rest</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-jersey</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-web</artifactId>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-devtools</artifactId>

<scope>runtime</scope>

<optional>true</optional>

</dependency>

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-test</artifactId>

<scope>test</scope>

</dependency>

<dependency>

<groupId>org.projectlombok</groupId>

<artifactId>lombok</artifactId>

<optional>true</optional>

</dependency>

<!-- this Dependency helps make sure that pathing works correct-->

<dependency>

<groupId>org.apache.tomcat.embed</groupId>

<artifactId>tomcat-embed-jasper</artifactId>

<scope>provided</scope>

</dependency>

<dependency>

<groupId>javax.xml.bind</groupId>

<artifactId>jaxb-api</artifactId>

</dependency>

<dependency>

<groupId>org.javassist</groupId>

<artifactId>javassist</artifactId>

<version>3.25.0-GA</version>

</dependency>

</dependencies>

<build>

<plugins>

<plugin>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-maven-plugin</artifactId>

</plugin>

</plugins>

</build>

</project>

**src/main/java**

**Create package com.project.Feedback**

**package com.project.Feedback;**

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication

public class FeedbackApplication {

public static void main(String[] args) {

SpringApplication.run(FeedbackApplication.class, args);

}

}

**Create package com.project.Feedback.controllers**

**Create FeedbackController.java**

package com.project.Feedback.controllers;

import org.springframework.beans.factory.annotation.Autowired;

import org.springframework.http.MediaType;

import org.springframework.web.bind.annotation.GetMapping;

import org.springframework.web.bind.annotation.PostMapping;

import org.springframework.web.bind.annotation.RequestBody;

import org.springframework.web.bind.annotation.ResponseBody;

import org.springframework.web.bind.annotation.RestController;

import com.project.Feedback.entities.Feedback;

import com.project.Feedback.services.FeedbackService;

@RestController

public class FeedbackController {

@Autowired

FeedbackService feedbackService;

@GetMapping("/feedback")

public Iterable<Feedback> getAllFeedbacks(){

return feedbackService.GetAllFeedback();

}

@PostMapping(path="/feedback", consumes= {MediaType.APPLICATION\_JSON\_VALUE})

public Feedback addNewFeedback(@RequestBody Feedback fb) {

Feedback newFb = new Feedback(fb.getComments(), fb.getRating(), fb.getUser());

feedbackService.addNewFeedback(newFb);

return newFb;

}

}

**Create TestFormController.java**

package com.project.Feedback.controllers;

import org.springframework.beans.factory.annotation.Autowired;

import org.springframework.stereotype.Controller;

import org.springframework.ui.ModelMap;

import org.springframework.web.bind.annotation.GetMapping;

import org.springframework.web.bind.annotation.ModelAttribute;

import org.springframework.web.bind.annotation.PostMapping;

import com.project.Feedback.entities.Feedback;

import com.project.Feedback.services.FeedbackService;

@Controller

public class TestFormController {

@Autowired

FeedbackService feedbackService;

@GetMapping("/test\_form")

public String showTestForm(ModelMap model) {

model.addAttribute("test", new Feedback());

return "testformjsp";

}

@PostMapping("/test\_form")

public String submitTestForm(@ModelAttribute("testUser") Feedback fb, ModelMap m) {

feedbackService.addNewFeedback(fb);

m.addAttribute("test", fb);

return "post";

}

// TODO: Implement form submission

// TODO: call RestTemplate and make json request to localhost.../feedback

}

//RestTemplate restTemplate = new RestTemplate();

//URL testForm = new URL("http://localhost:8090/feedbacks/{feedback}");

//ResponseEntity<String> response = restTemplate.getForEntity(testForm + "/7", String.class);

//ObjectMapper mapper = new ObjectMapper();

//JsonNode root = mapper.readTree(response.getBody());

//JsonNode name = root.path("name");

//model.addAttribute(name);

//String result = restTemplate.getForObject("http://localhost:8090/feedbacks/{feedback}", String.class, 7);

**Create package com.project.Feedback.repositories**

**Create FeedbackRepository.java**

package com.project.Feedback.repositories;

import org.springframework.data.repository.CrudRepository;

import org.springframework.stereotype.Repository;

import com.project.Feedback.entities.Feedback;

@Repository

public interface FeedbackRepository extends CrudRepository<Feedback, Integer> {

public Feedback findByUser(String feedback);

}

**Create package com.project.Feedback.entity**

**Create Feedback.java**

package com.project.Feedback.entities;

import javax.persistence.Column;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.GenerationType;

import javax.persistence.Id;

import javax.validation.constraints.NotNull;

import lombok.Data;

@Entity

@Data

public class Feedback {

@Id

@GeneratedValue(strategy = GenerationType.AUTO)

@Column(name="id")

@NotNull

private Integer id;

@Column(name="comments")

private String comments;

@Column(name="rating")

@NotNull

private int rating;

@Column(name="user")

private String user;

public Feedback() {

super();

}

public Feedback(String comments, Integer rating, String user) {

this.comments = comments;

this.rating = rating;

this.user = user;

}

/\*

\* Needed the setters and getters to be able to add name and comments otherwise

\* they are nulls when entering the SQL DB

\*/

public String getComments() {

return comments;

}

public void setComments(String comments) {

this.comments = comments;

}

public Integer getRating() {

return rating;

}

public void setRating(Integer rating) {

this.rating = rating;

}

public String getUser() {

return user;

}

public void setUser(String user) {

this.user = user;

}

@Override

public String toString() {

return "Feedback [id=" + id + ", comments=" + comments + ", rating=" + rating + ", user=" + user + "]";

}

}

**Create package com.project.Feedback.services**

**Create FeedbackService.java**

package com.project.Feedback.services;

import org.springframework.beans.factory.annotation.Autowired;

import org.springframework.stereotype.Service;

import com.project.Feedback.entities.Feedback;

import com.project.Feedback.repositories.FeedbackRepository;

@Service

public class FeedbackService {

@Autowired

FeedbackRepository feedbackRepo;

public Iterable<Feedback> GetAllFeedback() {

return feedbackRepo.findAll();

}

public Feedback addNewFeedback(Feedback fb) {

return feedbackRepo.save(fb);

}

}

**Src/main/resources**

**Create folder static and create testform.html and testform.js**

**testform.html**

<!DOCTYPE html>

<html>

<head>

<script src=*"testform.js"*>

</script>

</head>

<body>

<!-- This is a form that is used for testing on the client

side using a client-side code form -->

<h2>Feedback Test Form</h2>

<form onsubmit="SubmitTestForm()">

<label for=*"user"*>User:</label><br>

<input type=*"text"* id=*"user"* name=*"user"* placeholder=*"John"*><br>

<label for=*"comments"*>Comments:</label><br>

<input type=*"text"* id=*"comments"* name=*"comments"* placeholder=*"Doe"*><br><br>

<input type=*"submit"* value=*"Submit"*>

</form>

<p>If you click the "Submit" button, the form-data will be sent to a page called "/action\_page.php".</p>

</body>

</html>

**testform.js**

**function** SubmitTestForm() {

//TODO: gather fields from form

//TODO: Jsonify form fields

//TODO: Call postFormDataAsJson to http://localhost:8090/your/endpoint

alert("The form was submitted");

}

/\*\*

\* Helper function for POSTing data as JSON with fetch.

\*

\* **@param** {Object} options

\* **@param** {string} options.url - URL to POST data to

\* **@param** {FormData} options.formData - `FormData` instance

\* **@return** {Object} - Response body from URL that was POSTed to

\*/

**async** **function** postFormDataAsJson({ url, formData }) {

/\*\*

\* We can't pass the `FormData` instance directly to `fetch`

\* as that will cause it to automatically format the request

\* body as "multipart" and set the `Content-Type` request header

\* to `multipart/form-data`. We want to send the request body

\* as JSON, so we're converting it to a plain object and then

\* into a JSON string.

\*

\* **@see** https://developer.mozilla.org/en-US/docs/Web/HTTP/Methods/POST

\* **@see** https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global\_Objects/Object/fromEntries

\* **@see** https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global\_Objects/JSON/stringify

\*/

**const** plainFormData = Object.fromEntries(formData.entries());

**const** formDataJsonString = JSON.stringify(plainFormData);

**const** fetchOptions = {

/\*\*

\* The default method for a request with fetch is GET,

\* so we must tell it to use the POST HTTP method.

\*/

method: "POST",

/\*\*

\* These headers will be added to the request and tell

\* the API that the request body is JSON and that we can

\* accept JSON responses.

\*/

headers: {

"Content-Type": "application/json",

"Accept": "application/json"

},

/\*\*

\* The body of our POST request is the JSON string that

\* we created above.

\*/

body: formDataJsonString,

};

**const** response = await fetch(url, fetchOptions);

if (!response.ok) {

**const** errorMessage = await response.text();

throw new Error(errorMessage);

}

return response.json();

}

**application.properties**

spring.jpa.hibernate.ddl-auto=update

spring.datasource.url=jdbc:mysql://localhost:3306/mywork

spring.datasource.username=root

spring.datasource.password=password

logging.level.org.springframework.web: DEBUG

spring.mvc.view.prefix=/WEB-INF/jsp/

spring.mvc.view.suffix=.jsp

server.port=8080

**src/main/webapp/WEB-INF/jsp**

**Create index.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Welcome Page</title>

</head>

<h2>Landing Page</h2>

<body>

<a href=*"test\_form"*>Test Form</a><br/><br/>

<a href=*"feedback"*>See all Feedbacks</a><br/><br/>

<!-- Can only use these (below) if you have jersey dependency -->

<br/><br/>

<p>Can only use these link below if you have the jersey dependency added to this dependency.

Jersey has been added to this project so it can use the links below.</p>

<a href=*"feedbacks"*>See all feedbacks as Json format</a><br/><br/>

<a href=*"profile/feedbacks"*>See Json's in profile</a>

</body>

</html>

**Create post.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Post test</title>

</head>

<body>

Successfully added: ${testUser.toString()}

</body>

</html>

**Create testformjsp.jsp**

<%@ taglib prefix=*"form"* uri=*"http://www.springframework.org/tags/form"*%>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Spring test App</title>

</head>

<body>

<form:form action=*"/test\_form"* method=*"post"* commandName=*"testUser"*>

<label for=*"user"*>User:</label><br>

<input type=*"text"* id=*"user"* name=*"user"* placeholder=*"John"*><br>

<label for=*"comments"*>Comments:</label><br>

<input type=*"text"* id=*"comments"* name=*"comments"* placeholder=*"Doe"*><br><br>

<input type=*"submit"* value=*"Submit"*>

<label for=*"rating"*>Rating:</label><br>

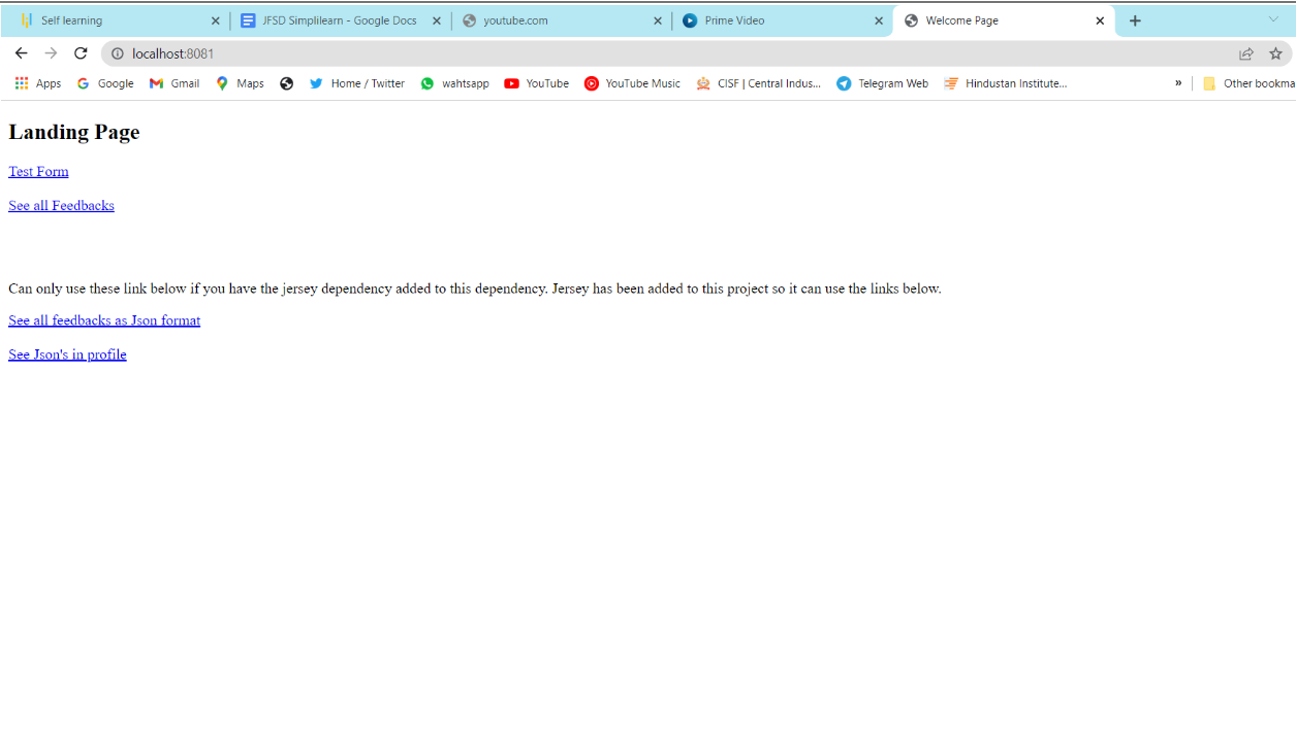
<input type=*"range"* name=*"rating"* id=*"rating"* min=*"0"* max=*"10"* value=*"5"* class=*"slider"*>

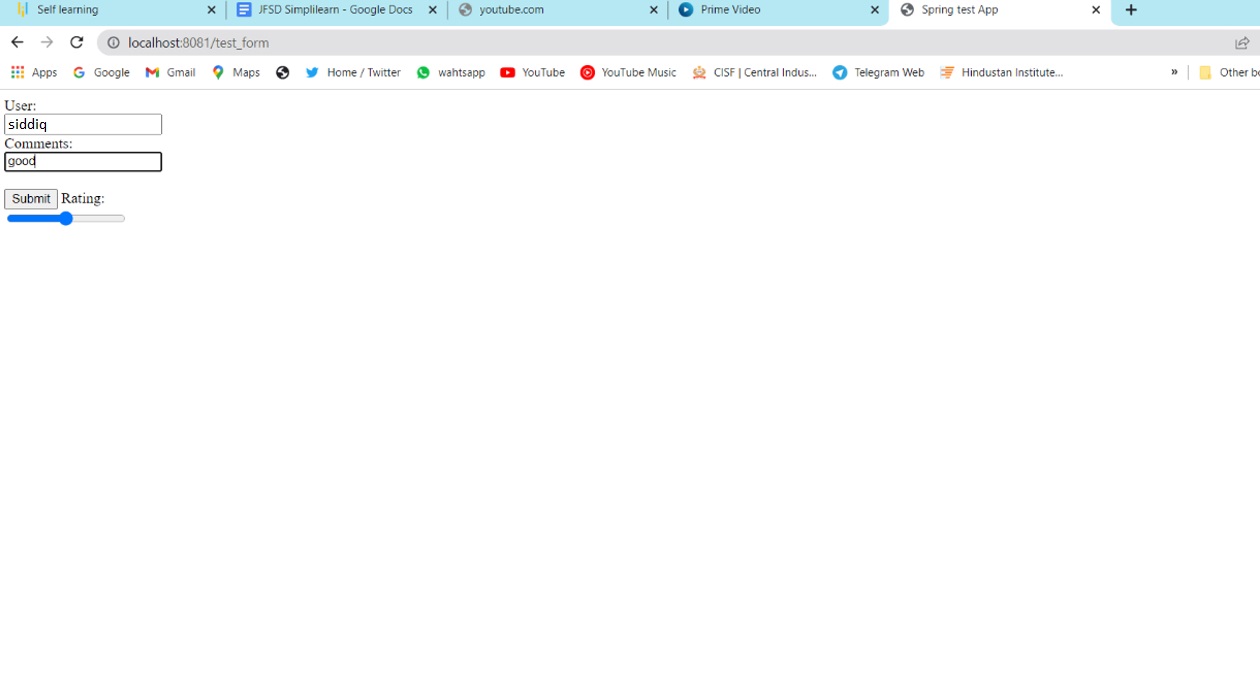
</form:form>

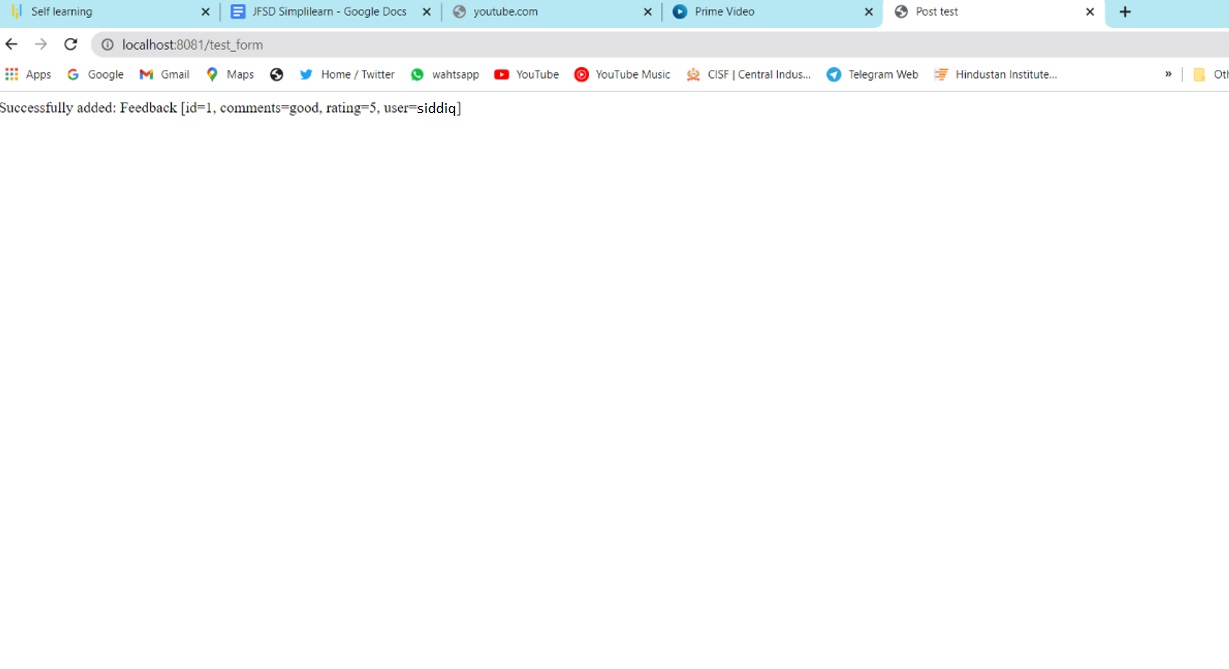
</body>

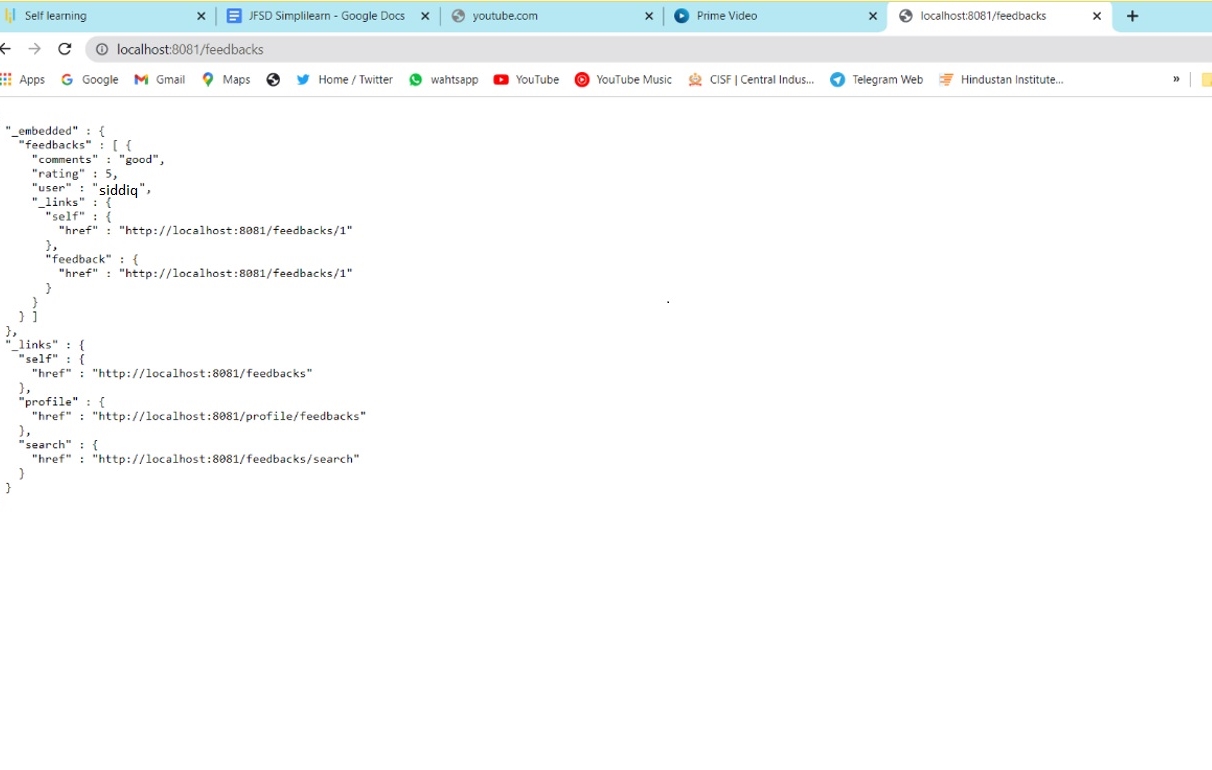
</html>

Output:









siddiq